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ABSTRACT

Three programs of early intervention designed specifically for the Mexican American child are discussed. Three groups, each consisting of 16 three-year-old children, were involved in a nine month program. The first group of children, enrolled in a daily three hour bilingual preschool program, were exposed to sequenced instructional activities. Five training areas were stressed: (1) visual skills, (2) auditory skills, (3) motor skills, (4) English language skills, and (5) problem solving and reasoning skills. The parents of children enrolled in the second group met regularly with staff members to focus on health, nutrition and education of the children. The goal was to raise the intellectual performance of the children through an indirect approach designed to affect the behavior of the parents. The third session of children attended classes for ten hours per day at a day care center where they could develop at their own rate. The programs were evaluated by: (1) a non-verbal I.Q. test, and (2) a measure of the child's receptive language functioning. Findings reveal that children who score below national middle class norms when tested on standardized instruments requiring language, test at about national norms on standardized instruments which dc not require the use of language. Children enrolled in the first group program showed significant gains in I.Q., over the comparison groups. (Author/MC)

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EARLY EDUCATION FOR SPANISH SPEAKING MEXICAN AMERICAN CHILDREN-

A COMPARISON OF THREE INTERVENTION STRATEGIES

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EARLY EDUCATION FOR SPANISH SPEAKING MEXICAN AMERICAN CHILDREN- A COMPARISON OF THREE INTERVENTION STRATEGIES

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During the past decade the attention of many professionals in Education and Child Development has been directed toward the problems of compensatory education. Intervention at an early age appeared to be one of the most promising solutions for those children who enter first grade unprepared to cope with the intellectual, social and emotional demands of our educational system.

Although numerous programs have focused on the development of compensatory programs for the low income Negro American, relatively little attention has been given to those children in our society who enter school speaking a language different from that of the wider community. Approximately 40 percent of the more than 5,000,000 persons in the United States of Mexican origin or ancestry live in Texas. Most of these persons are native Spanish-speakers, living and working in an English-speaking society. The 1960 census in Texas revealed that the median school years completed by the Anglo population over 25 years of age was 11.5 years, but only 6.1 years for the comparable Spanish surname population. Typically, the Mexican American child-urban and migrant-with a home language of Spanish, reaches school age with little knowledge of English. His proficiency in Spanish is often limited as well.

The purpose of this study was to compare three strategies of early intervention designed specifically for the Mexican American child. Although the emphasis, the methodology, and the content varied widely among the three programs, each attempted to overcome the disadvantages faced by the preschool child of low socioeconomic circumstances and Mexican American origin.

Three groups, each consisting of sixteen three-year-old children, were involved in a nine month program. Children in Group I were enrolled in a daily three hour bilingual preschool program where the children were exposed to carefully sequenced instructional activities. This curriculum is being developed by the Southwest Educational Development Laboratory. The parents of the children enrolled in Group II participated in a parental-community involvement program. Staff members met regularly with the parents and the program focused on providing information related to health, nutrition and education of the young child. Chiddren in Group III attended classes at a day care center for ten hours per day. The instructional program was basically traditional in its approach.

Selection of Subjects

The children in Groups I and II were drawn from a community comprised almost entirely of disadvantaged Mexican Americans. All of the children were from homes with incomes within the poverty range, were from Mexican American families and spoke Spanish primarily.

The children in these groups were matched by age, sex, and high or low poverty status, using an adaptation of Orshansky's index. A sample stratified by age, at three month intervals, sex, and poverty level was drawn through a random process. Sixteen children who met the specified criteria were selected to receive the Laboratory bilingual preschool program. A second sample was drawn in a similar manner from the same population. The parents of these children received the special Parental Involvement Program. The planned randomization of pupils from day care centers could not be obtained because of the relatively small number of three-year-old Mexican American children in neighborhood day care centers. Instead, an availability sample of 19 children from comparable socio-economic circumstances, ethnic background, and relatively equal levels of development was established for the pretest situation; 14 of these were still in the centers at the time of posttesting.

Intervention Strategies

The instructional program developed by SEDL was provided for children in Group I. The program goals were to strengthen the child's conception of self as a worthy individual, to develop his sensory-perceptual skills, language skills and problem solving abilities.

Instructional activities were designed for five major training areas. These were:

Visual Skills
Auditory Skills
Motor Skills
English Language Skills
Problem Solving and Reasoning Skills

The program builds upon each child's ability in his native language. Skill outlines representing three year objectives have been developed for each training area. The curriculum consisted of sequenced series of lessons that begin with the lowest order of skill competencies and proceed systematically to higher level tasks.

The major goal of the parental-involvement group was to raise the intellectual performance of the children through an indirect approach designed to affect the behavior of the parents.

The involvement program provided parental instruction through a planned program of meetings held at the school and in homes. Instructional programs were presented largely using Spanish as a means of instruction, covering such topics as:

Storytelling Techniques
Nutrition
Child Care
Mental Health, etc.

The major objective of the Day Care Program (Group III) was to provide an environment where young children could develop at their own rate physically, emotionally, socially, and mentally.

Curriculum planning emphasized specific units of interest to preschool children, used to increase the child's knowledge of his environment and his community. Units were planned well in advance by the Center Director, who prepared a general outline including objectives and goals. Teachers were then responsible for developing detailed lesson plans. The use of Spanish language was permissable, but not emphasized.

Evaluation Procedures

A test battery of three pre- and posttest instruments were administered to children in each of the three groups in September, 1968, and again in May, 1969. This battery included:

1. The Leiter International Performance Scale (Arthur Adaptation) - a nonverbal I. Q. test, standardized from the two-year-old level to the adult level.

2. The Peabody Picture Vocabulary Test which provides a measure of the child's receptive language functioning. Form A was administered in English to pupils in all treatment groups. A Spanish translation of Form B also was administered to the three groups. Norms have not been established for the Spanish translations. The norms for the English version of Form B have been used in this report, although it is recognized that they may not be applicable.

Results and Discussion

The evaluation program was intended to permit the testing of several hypotheses regarding children from a low socioeconomic strata and particular ethnic origin. The evaluation not reported here also provided for examination of the effects of the various developmental programs and the desirability of modifying the program in particular respects, including social, physical and emotional aspects.

HYPOTHESES

The central theme of each hypothesis was that educationally deprived children of preschool age start with specifically definable handicaps, in terms of the educational system, which can be eliminated by a carefully structured learning system.

Hypothesis I

Children from educationally deprived homes will score below national norms on standardized test instruments which require the use of language in test administration.

This hypothesis is, of course, well supported by the literature concerning other studies. The findings in this study also support the hypothesis.

Findings. For all three groups of preschool children (Group 1, Group 2, and Group 3) the evaluation design called for the administration of language and non-language intelligence tests. The Peabody Picture Vocabulary Test, a verbal measure, was administered in English (Form A) and in Spanish (Form B). Against a norm of 100 I.Q. on these measures, all three groups of children had pretest mean scores well below national norms, with most of the children scoring more than one standard deviation below.

TABLE I

PRETEST I.Q. MEAN SCORES OF GROUPS G1, G2, and G3 ON LANGUAGE AND NONLANGUAGE DEVELOPMENTAL MEASURES

Measuring Instrument Applied	SEDL Experimentals G1	Par. Inv. Children G2	Day Care Children G3	Norms
PPVT - Form A English	59.00	57.57	59.71	100.0
- Form B Spanish	87.63	74.50	76.07	100.0
LEITER	107.06	97.15	99.09	100.0

Scores on the English version of the Peabody (Form A) were low, reflecting, as might be expected, the limited oral vocabulary of three-year-old children whose native tongue is Spanish. However, the Spanish version (Form B) also indicated a mean level below the normal distribution for three-year-old children. Earlier, it was noted that there is some question about application of the English-version norms of Form B to the Spanish translation of the instrument. The experimental group, which scored substantially higher on a nonverbal instrument also scored substantially higher on the Form B of the PPVT than did the two comparison groups. The congruence between the nonverbal instrument and the native-language verbal test results appears to justify some confidence in the Spanish Form B results.

Hypothesis II

Children from educationally deprived homes, when tested on standardized instruments which do not require language in the test administration, will score at or approximately at national norms for middle-class children.

Findings. In Table I the pretest mean scores of all three groups of children are shown for the Leiter, a nonlanguage test of intelligence which relies heavily on visual discrimination. In contrast to the results on the Peabody Picture Vocabulary Tests, which requires language for administration, the pupils tested with the Leiter performed at levels well within the normal range.

Hypothesis III

The Laboratory's planned Early Childhood Education System will raise the intellectual performance level, as measured by standardized instruments, of the impoverished Mexican American child signigicantly more than will:

a. An indirect intervention in the child's development through the use of a structured Parent Involvement Program, or

b. A direct intervention through a traditional nursery care program, as exemplified by the programs of selected Day Care Centers.

Findings. A comparison of the posttest scores of pupils of the three treatment groups with the pretest scores indicates a substantially greater gain in each instance by the pupils of the SEDL experimental program.

TABLE II

MEAN PRETEST AND POSTTEST SCORES FOR TREATMENT GROUPS - G1 AND COMPARISON GROUPS G2 AND G3

I. Q. SCORES

Measuring Instrument Applied	SEDL Experimentals G1			Par. Inv. G2			Day Care Compar. G3		
	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
Leiter	107.06	120.60	13.63**	97.15	96.31	-.84	99.09	101.36	2.27
PPVT-Form A (English)	59.00	69.19	10.19	57.57	57.57	0.00	59.71	62.50	2.88
PPVT-Form B (Spanish)	87.63	102.38	14.75**	74.50	80.14	5.65	76.07	76.93	.86

I. Q. as obtained by the method described in the respective test manual.

**p .01

The reported gain for the SEDL experimental pupils on the Leiter was signigicant (P. < .01). The children in Groups G2 and G3 showed no significant gains on the Leiter (p. < .8173 and p. < .5983, respectively).

The analysis of gain on the Peabody, Form A (English), did not reveal a statistically significant difference within any of the three groups of children. The gain of the experimental children at SEDL did, however, approach statistical significance (F= 3.249; d.f. 1,15; p. < .089). For the other two groups the gain clearly did not meet the statistical significance test (T2: F 1.0; d.f. = 1,13; p. < 1.000; T3: F = .485; d.f. = 1,13; p. < .505).

The data on the Peabody, Form B (Spanish), displays a statistically significant gain in scores for the experimental pupils (G1 - SEDL) (F = 13.269; d.f. = 1,15; p. < .001). The gain for the other two groups was not statistically significant (T2: F = 1.189; d.f. = 1,13; p. < .296; T3: F = .055; d.f. = 1,13; p. < .813).

The preceding data reported an initial (pretest) difference between the three groups of children on the Peabody - Form B. To determine whether initial capacity was responsible for greater gain by Group 1, an analysis of covariance was made for the pretest and posttest scores on the Peabody Form A (English) and the Peabody Form B (Spanish). This analysis matches the groups on the basis of the mean pretest scores of all the pupils in all three groups. The effect of this analysis is to equate the three groups at pretest and to compare the posttest scores against the predicted posttest scores developed from the "grand" pretest mean.

TABLE III

COMPARISON OF GAIN OF THE THREE GROUPS IN ADJUSTED POSTTEST MEANS AGAINST PRETEST GRAND MEAN: PEABODY FORM A (ENGLISH)

	Pretest Mean		Posttest Mean		Gain (Adjusted
Group	Actual	Grand	Actual	Adjusted	Less Grand Mean)
G1	59.00	58.72	69.19	73.9	+15.2
G2	57.57	58.72	57.57	57.9	- .8
G3	59.71	58.72	63.59	62.2	+ 3.5

Between groups: F - ratio = 8,54; d.f. = 2,29; p. .0011

TABLE IV

COMPARISON OF GAIN OF THE THREE GROUPS IN ADJUSTED POSTTEST MEANS AGAINST PRETEST GRAND MEAN: PEABODY FORM B (SPANISH)

Group	Pretest Mean Actual	Pretest Mean Grand	Posttest Mean Actual	Posttest Mean Adjusted	Gain (Adjusted Less Grand)
T1	87.63	79.5	102.38	100.00	+ 20.6
T2	74.50	79.5	80.14	81.7	+ 2.2
T3	76.07	79.5	76.93	78.0	- 1.5

Between groups F - ratio = 11.26; d.f = 2,40; p. .0003

The convariance analysis on both forms of the Peabody demonstrated the far greater achievement gain of the first (G1) Group. The gain for G1 was statistically significant; there was no significant difference between Groups G2 and G3 on either of the instruments.

SUMMARY OF CONCLUSIONS

All three hypotheses of the SEDL structured Early Childhood Education Learning System were confirmed by the evaluation findings. Educationally deprived children did score below national middle-class norms when tested on standardized instruments requiring language in the test administration. However, they tested at, or approximately at, national norms on standardized instruments which did not require the use of language in the test administration Finally, the children enrolled in the Laboratory Early Childhood Program (G1) showed statistically significant gains in I.Q. scores on two of the three measures during the 1968-69 school year while children in the comparison groups did not.

The findings lend support to the contention that the Laboratory structured Early Childhood Education Learning System raises the intellectual performance level of impoverished Mexican American children significantly more than the indirect intervention through the use of a structured Parent Involvement Program or the direct intervention through a traditional nursery care program exemplified by selected day care centers. The question, of course, is whether these and other gains can be maintained. Plans include following the development of these children to the third grade. Initial findings, however, support the continued use of the SEDL preschool program and its extension, under carefully controlled conditions, to other sites on an experimental basis. The Laboratory has, therefore, extended the program into additional experimental preschool programs for the 1969-70 school year in order to determine whether similar effects will be attained at different sites.